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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,163	03/31/2004	Christopher J. Hansen	BP 3023	8185

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EXAMINER	
YUN, EUGENE	
ART UNIT	**PAPER NUMBER**
2618	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/815,163	HANSEN ET AL.	
	Examiner	Art Unit	
	Eugene Yun	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 July 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) *22-32* is/are withdrawn from consideration.

5)☒ Claim(s) *17-21* is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 1-21 in the reply filed on 7/27/2007 is acknowledged.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnstein et al. (US 5,889,821) in view of Hall (US 3,543,156).

Referring to Claim 1, Arnstein teaches a radio transceiver, comprising:

radio front end for receiving 621 (fig. 6B), amplifying 624 (fig. 6B) and down-converting 629 (fig. 6B) and filtering 627 (fig. 6B) a radio frequency (RF) signal to produce a low frequency received signal (see col. 8, lines 48-54);

baseband processor coupled to receive and process the digital low frequency signal (see col. 9, lines 7-12); and

wherein the baseband processor does not produce digital signals whenever the control signal indicates that the radar signal has been received (see col. 9, lines 1-6).

Arnstein does not teach an analog-to-digital converter (ADC) operatively coupled to receive the low frequency received signal, the ADC producing a digital low frequency signal. Hall teaches an analog-to-digital converter (ADC) operatively coupled to receive

the low frequency received signal, the ADC producing a digital low frequency signal (see col. 2, lines 1-2); and

radar detection circuit coupled to receive the digital low frequency signal, wherein the radar detection circuit measures magnitude levels of received signals, rise time, fall time, and detects a received radar pulse pattern and produces a corresponding control signal indicating whether a radar signal has been detected to the baseband processor (see col. 1, lines 68-72). Therefore, it would have been obvious to one of ordinary skill in the art to provide the teachings of Hall to said device of Arnstein in order to decrease the amount of unwanted noise in radar operation.

Referring to Claim 2, Arnstein also teaches the radio front end including a low noise amplifier (LNA) for amplifying the received RF signal and down-conversion circuitry for down-converting the received and amplified RF signals to produce a down-converted signal (see col. 8, lines 48-54).

Referring to Claim 3, Arnstein the down-converted signal comprising one of a low intermediate frequency (IF) or baseband signal (see col. 9, lines 7-12).

Referring to Claim 4, Arnstein also teaches the down-converted signal is produced to low pass filter circuitry for producing low pass filtered signals, wherein the low pass filtered signals are the low frequency signals produced to the analog-to-digital converter (see col. 9, lines 7-12).

Referring to Claim 5, Arnstein also teaches the down-converted signal produced as I and Q channel signals (see col. 9, line 66 to col. 10, line 10).

Referring to Claim 6, Arnstein also teaches the radar detection circuit receiving I and Q channel digital low frequency signals (see col. 9, line 66 to col. 10, line 10).

Referring to Claim 7, Hall also teaches the radar detection circuit measuring signal magnitude rises above a plurality of thresholds, rise time from a first to a second threshold, time above the second threshold, and fall time from the second to the first threshold (see col. 8, lines 15-32).

Referring to Claim 8, Hall also teaches the radar detection circuit monitoring at least one of a magnitude, a pulse width and timing and timing relationships of received pulse to determine whether a radar pulse has been received (see col. 8, lines 15-32).

Referring to Claim 9, Arnstein also teaches the radar detection circuit comprising a state machine for determining whether the received pulse has a specified characteristic of a radar pulse (see col. 6, lines 22-33).

Referring to Claim 10, Hall also teaches the control signal produced by the radar detection circuit is a binary signal that is set to a specified logic state whenever the radar signal is detected (see col. 3, lines 47-57).

Referring to Claim 11, Hall also teaches the control signal produced by the radar detection circuit includes threshold level and timing information wherein the baseband processor determines that a radar signal has been detected (see col. 8, lines 15-32).

Referring to Claim 12, Hall also teaches logic within the baseband processor monitoring at least one of the magnitude, the pulse width and the timing and timing relationships of received pulses to determine whether a radar pulse has been received (see col. 8, lines 15-32).

Referring to Claim 13, Hall also teaches the baseband processor determining whether the pulse is a radar pulse is a radar based upon pulse width (see col. 4, lines 58-66).

Referring to Claim 14, Hall also teaches the baseband processor determining that the pulse is not a radar pulse if the pulse width is less than a specified amount (see col. 4, lines 58-66).

Referring to Claim 15, Hall also teaches the baseband processor determining that the pulse is not a radar pulse if the pulse width is greater than a specified amount (see col. 4, lines 58-66).

Referring to Claim 16, Hall also teaches the baseband processor determining that the pulse is not a radar pulse is a period between pulses is not approximately constant (see col. 4, lines 58-66).

Allowable Subject Matter

4. Claims 17-21 are allowed.

Regarding Claim 17, Arnstein and Hall do not teach, alone nor in combination, a radar detection circuit coupled to receive the digital low frequency signal, wherein the radar detection circuit further includes:

multiplication circuitry for receiving and squaring a low frequency digital signal;

moving average filter coupled to selectively receive an output signal produced by the multiplication circuitry, the moving average filter producing a moving average filtered signal;

first conversion block for converting a magnitude of the moving average filtered signal into decibel values; and

a threshold comparison state machine coupled to receive an output of the first conversion block in decibel values, the threshold machine for measuring rise time, fall lime, and magnitude levels of received signals and detects a received radar pulse pattern and produces a corresponding control signal indicating whether a radar signal has been detected to the baseband processor.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugene Yun whose telephone number is (571) 272-7860. The examiner can normally be reached on 9:00am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on (571)272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Eugene Yun
Examiner
Art Unit 2618

EY